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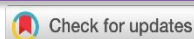
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Teacher Training in Inquiry-Based Learning in Social Studies in Cambodia

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Abstract

This case study aimed to explore the characteristics, level of implementation, and challenges of training Inquiry-Based Learning (IBL) in Cambodia, specifically focusing on the social studies subject used in Provincial Teacher Training Centers (PTTCs) and Primary Schools. This study, researcher focuses on mix group are teacher trainers and initial primary school teachers. Researcher have put forward a hypothesis stating that an inquiry-based learning model addresses the limitations found in traditional learning methods. This study, researcher found that both teacher trainers and initial primary school teachers held a positive perception of the IBL approach due to its ability to promote critical thinking and students' engagement. In teacher training centers, the level of IBL implementation in social studies was primarily at level 2, known as "guided inquiry." In primary schools, the level of IBL implementation in social studies was mostly at level 1, referred to as "structured inquiry." In conclusion, social studies, as a subject area, deals with complex and real-world issues, making it an excellent domain for implementing IBL. Through inquiry-based learning, students can explore historical events, analyze societal structures, and understand global challenges in a more engaging and interactive manner.

Keywords: Initial Primary School Teacher; Inquiry-Based Learning; Social Studies; Teacher Trainers; Trainees

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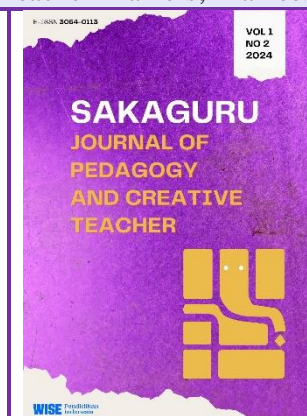
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INTRODUCTION

Inquiry-Based Learning was implementation and adaptation in different contexts, particularly in social studies classrooms at various grade levels [1], [2], [3], [4]. Exploring the characteristic, level of implementation Inquiry-Based Learning and challenges of training Inquiry based learning in Cambodia is very important for improving education in Cambodia [5], [6], [7]. Therefore, there is a need for research that delves deeper into the effectiveness of IBL in social studies classrooms and examines how it is implemented and adapted in different educational settings. This research problem suggests an investigation into the effectiveness of IBL methods in teacher training programs for social studies educators [8], [9], [10], [11], [12]. This study want to explore specific about strengths and weakness of IBL approach in social studies that used in PTTCs. This study present significant findings that contribute to addressing research problems. First, the results show how teacher trainers and initial primary school teachers implementation IBL in their class. They have positive perception and meet some challenges during their teaching. Additionally, level of implementation IBL in training center is in level 2 and primary school is in level 1 [13], [14], [15]. Regarding to this can make contributes for pre-service and training social studies that teacher trainers interested in affecting instructional change. If the challenges of initial primary school describe when seeking to incorporate inquiry-based instruction can be identified, we can better support implementation efforts in training center. In addition, researcher can understand the perspective of the teacher trainers implementing the change before we can begin considering the impact on student learning in social studies class when use Inquiry-based learning approach. Through this practical contribution, this study can lead the implementation IBL approach effectively for teacher preparedness and confident to develop their teaching practices. Additionally, it can improve student achievement to gain deep understanding of social studies concept by using IBL approach in PTTCs and Primary Schools in Cambodia.

The results of this study are limited to four provincial teacher training centers and four primary schools in Kratie Province, Kampong Cham Province, Stueng Treng Province, and Siem Reap Province. In the future, after further research on training in the inquiry-based learning approach in social studies, it may be possible to generalize the findings to other similar institutions in other parts of Cambodia. Previous studies have been done in Teacher' perceptions of Inquiry-Based Learning by using mix method that selected 10 social studies teachers from four secondary school in Phnom Penh. Chea (2016) [16], [17]. Regarding to this, we can make assumption that the implementation and adaptation of Inquiry based learning still have examined the effectiveness of IBL in social studies, there is a need for more research that examines how IBL is implemented and adapted in different contexts, such as different grade levels. However, this study not only will examine the perception from teacher but also want to identify what level of IBL that use in teacher training center and primary school..

METHODS

In this study, the researcher performed classroom observation and conducted semi-structured interviews. Classroom observation was performed first because it is useful to see real practice in the classroom, whether teacher practices or student responses. The researcher then conducted semi-structured interviews to monitor the teachers' understanding of the IBL approach and the

successes and challenges that they face in implementing this approach. It is good method for deep exploration [18], [19].

There are two levels of sampling: teacher trainers and initial primary school teachers, who had just finished studies at the teacher training centers. Additionally, there are no individual or one-by-one relationships, but there is a consistent relationship between teacher trainers in one teacher training center and initial primary school teachers who graduated from the same teacher training center and took the classes from the teacher trainers. In the first instance, purposive sampling was selected in four provincial teacher training centers. Researcher will choose five teacher trainers that teach social studies subject in four provincial teacher training centers. After discussions with the teacher trainers, the researcher purposely selected five initial primary school teachers for the study for which (1) road conditions ensured high security and quick transit when travelling by private transportation to reach there. These primary schools had initial primary teachers who had just finished training at the teacher training centers. In each school, data collectors were asked to observe in Khmer.

The schools were chosen for several reasons. First, the schools were considered have good teachers' and students' qualities. Second, the schools had implemented the IBL approach in teaching. Third, the policy of these schools give permission for researcher to conduct research and collect essential data of the study there.

This study, researcher used Thematic analysis is a qualitative research method used to identify, analyze, and report patterns (themes) within data. This analysis insights into the underlying meanings and concepts present in textual or visual data. Thematic analysis involves has six steps: (Braun and Clarke 2006) [20].

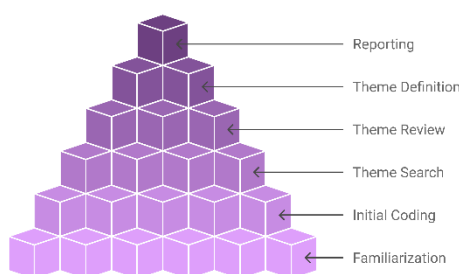


Figure 1. Thematic analysis process

The process begins with **familiarization with data**, where the researcher immerses themselves in the dataset through repeated reading to understand its content deeply. During this stage, initial thoughts, patterns, and ideas about potential themes are noted. The next step is **generating initial codes**, which involves systematically identifying meaningful segments of the data and assigning descriptive labels or codes to these segments. This step focuses on capturing the important aspects of the data without imposing any preconceived structure.

Once the data is coded, the process advances to **searching for themes**, where similar codes are grouped to form potential themes. This involves identifying patterns, connections, and relationships within and across the codes, allowing the researcher to generate themes that encapsulate significant features of the data. In the **reviewing themes** stage, the identified themes are refined by revisiting the dataset to ensure they accurately represent its content and context. This iterative process helps validate the themes and ensures alignment with the data.

The fifth step, **defining and naming themes**, involves developing clear definitions for each theme and assigning concise, meaningful labels that capture their essence. This step ensures that each theme is well-articulated and reflective of the data it represents. Finally, the process concludes with **writing the report**, where the researcher produces a comprehensive and detailed narrative that presents the thematic analysis, supported by data excerpts. This report highlights the significance of the findings and provides insights derived from the analysis. By following these steps, thematic analysis offers a robust framework for extracting meaningful patterns and themes from qualitative data.

Classroom Observation Sheet

Table 1. Stages of Practice in Inquiry-Based Learning

Step of Practice: Inquiry-Based Learning	Level 1		Level 2		Level 3	
	Teacher Activities	Student Activities	Teacher Activities	Student Activities	Teacher Activities	Student Activities
1. Create key question, hypothesis						
2. Use materials and ideas to consider or find evidence						
3. Find sources for evaluating and using evidence (explain about evidence, collection, selection, and reasoning)						
4. Make evidence and logic correctly and exactly explain						

This table outlines the stages of inquiry-based learning, starting from the creation of key questions and hypotheses to the development of evidence and logical explanations. Each stage is detailed based on the activities of teachers and students across three levels of progression: Level 1, Level 2, and Level 3.

Semi Structure Interview

A semi-structured interview guide was created to get three aims are:

1. Understanding of inquiry-based learning by the teacher trainers and initial primary school teachers.
2. How is the IBL approach implemented in social studies?
3. Perceptions of social studies using the IBL approach.

Data from Observation

The data recorded by the voice recorder and note taking of classroom activities were recorded from the beginning until the end of lesson with a focus on the step of IBL involved. After getting the record data, researcher will be transcribed in form of transcription to be used in the analysis of the data. In addition, the researcher analyzed the data and recorded themes emerging from the perceptions of teachers regarding their understanding of content knowledge in IBL and how they reflect upon themselves.

Data from Interview

The interviews were conducted to research particular questions and were recorded using a voice recorder. After the recordings were transcribed, they were analyzed using theories on the interconnections regarding the perceptions of IBL of teacher trainers and initial primary school teachers. The researcher then coded the categories and identified patterns in the interview data.

First, the researcher transcribed and categorized the findings from the interviews and class observations on how teaching was conducted using IBL in the provincial teacher training center. The discussion process examined such questions as the benefits of IBL, successes and challenges in using IBL, and the level of IBL used in the classroom. Second, researcher identified the challenges that teacher trainers and initial primary school teachers faced when using IBL.

RESULT AND DISCUSSIONS

Result

RQ1: How do teacher trainers in social studies classes implementation, understand, and perception IBL in social studies?

- Implementation of IBL : Understanding of IBL some teacher trainers use the IBL approach depending on time constraints, some use IBL in history and geography, some use IBL to teach trainees how to write a lesson plan and practice their teaching using the IBL approach, and some use the IBL approach in moral civics subject. All teacher trainers face challenges of implementation IBL such as content of lesson, time allocate and trainees' low understanding.
- Understanding of IBL : Teacher trainers who had trained in Lesson Study (LS) every Thursday understood how to teach IBL in social studies and science, because this training was intended to develop teaching training in social studies and science using the IBL approach. In the semi-structured interviews, some teacher trainers reported having trained in LS and some reported that they had not. However, they could understand the steps of IBL in teaching. On the other hand, they generally did not write lesson plans for IBL even though they know the steps of IBL and flow of the lesson during their training; instead, they just took notes about the step that they would teach their trainees.
- Perception of IBL : All participants preferred the IBL approach. All participants reported the aspects of IBL in social studies of perceived novelty, challenges in content adaptation, student engagement and depth of understanding, recognition by educational authorities, and promotion of critical thinking skills.

RQ2: What level of implementation Inquiry based learning approach do teacher trainers use in social studies class?

In teacher training centers, the level of IBL implementation in social studies was primarily at **level 2, known as "guided inquiry."** This level involves providing key questions to students and requiring them to think and organize processes to observe, identify data, interpret rational data, and reasonable research results. Teacher trainers mainly gave key questions to trainees and facilitated during the research and data interpretation process.

RQ3: How do Initial primary school teacher in the social studies class implementation IBL, reflection on Lesson Plan of IBL and perception IBL?

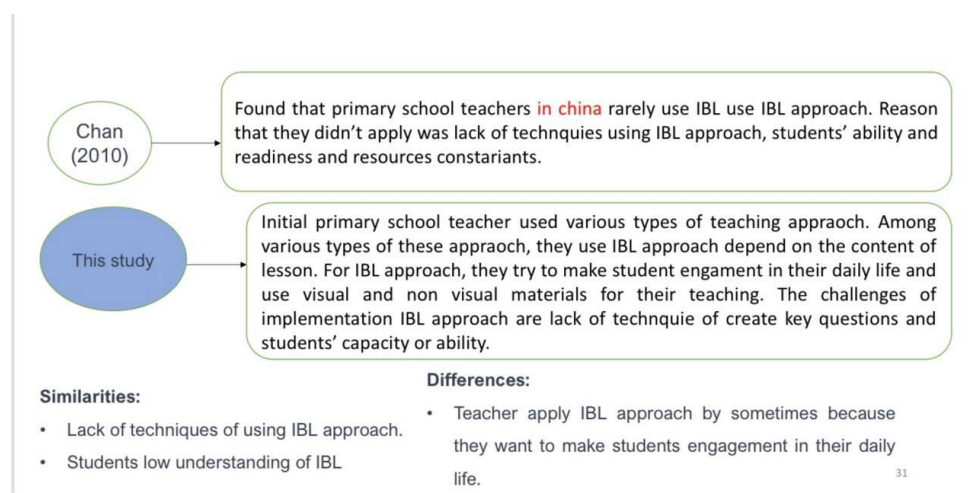
Implementation of IBL	: All participants used various forms of IBL in their teaching. P1 used the IBL approach for some contents, but time constraints were her difficulty in using IBL in class. P2 used the IBL approach to engage students in real life. P3 rarely used the IBL approach in her teaching because her school was in the countryside. P4 used the IBL approach by using visual and non-visual materials; her difficulty in teaching was controlling group discussions. P5 practiced the IBL approach in a good environment.
Reflections on the IBL Lesson Plan	: P3 and P5 took one hour to do the IBL lesson plan, while P1, P2, and P4 took around two or three hours. Besides the lesson plan, all participants needed some materials for teaching, such as a picture, the social studies curriculum, or poster paper, and teaching capacity too.
Perception of IBL	: Some participants prefer IBL, and some don't prefer IBL. P1 prefers IBL for students to express ideas but finds it difficult to reach conclusions and maintain control in the classroom. P2 dislikes IBL due to its ineffectiveness and the challenges faced in answering key questions, especially in social studies. P3 believes that IBL in social studies is effective because it relates to students' daily lives, while P4 supports IBL partially due to students' capacity and the rural school setting. P5 prefer IBL for its clear implementation steps.

RQ4: What level of implementation Inquiry based learning approach do initial primary school teacher use in social studies class?

In primary schools, the level of IBL implementation in social studies was mostly at level 1, referred to as "structured inquiry." At this level, key questions and processes of finding answers are provided to students, who then explain, interpret, research, or experiment with data to draw reasonable conclusions. Initial primary school teachers gave key questions to students and helped or provided clues for students to find answers. Then, they explained and evaluated the students' answers.

Discussions

RQ1



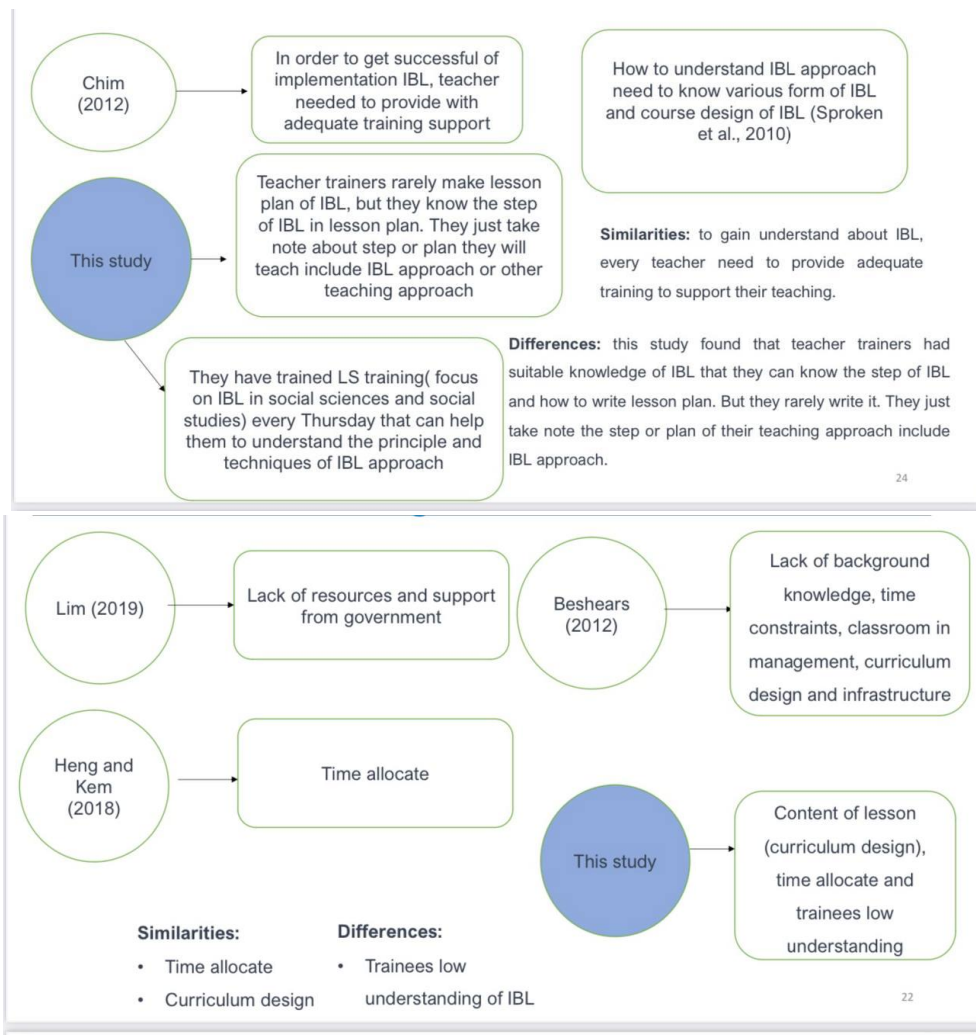


Figure 2. Comparison of Inquiry-Based Learning (IBL) Implementation Studies

This figure presents a comparison of various studies focusing on the implementation of Inquiry-Based Learning (IBL) approaches in education. The comparisons highlight similarities and differences in challenges, such as teachers' lack of understanding, time allocation, resource constraints, and curriculum design. Key studies referenced include Chan (2010), Chim (2012), Lim (2019), Beshears (2012), and Heng & Kem (2018) [21], [22], [23], [24], [25], along with findings from "This Study" to showcase its unique contributions. The figure also underscores the need for adequate teacher training, effective lesson planning, and addressing government support to enhance the adoption of IBL.

RQ2

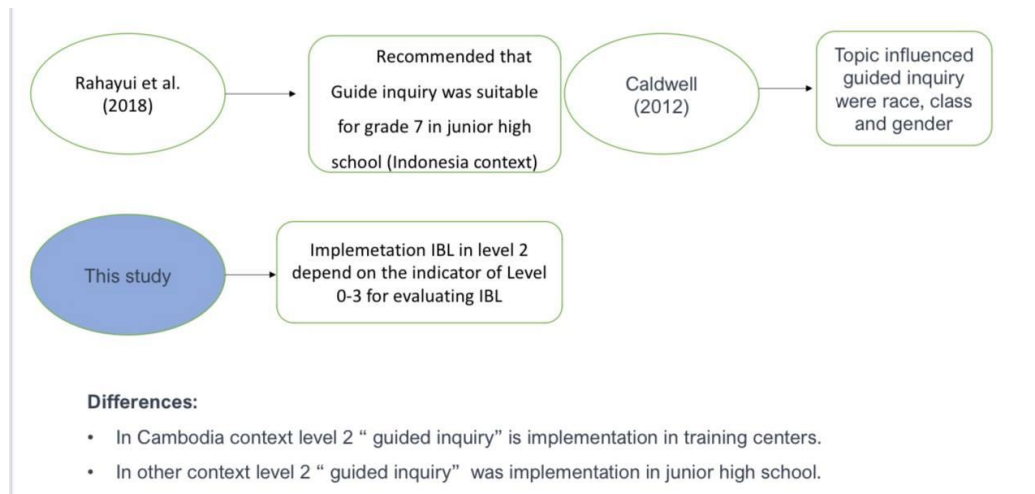


Figure 3. Comparison of Guided Inquiry Implementation in Different Contexts

This figure compares studies on the implementation of guided inquiry-based learning (IBL) across different contexts. Rahayui et al. (2018) [26] recommended guided inquiry for grade 7 in Indonesian junior high schools, while Caldwell (2012) [27] identified that race, class, and gender influenced the approach. "This study" focuses on IBL at Level 2, evaluated using a 0-3 indicator scale. Differences highlight the variation in guided inquiry implementation, such as being conducted in training centers in Cambodia versus junior high schools in other contexts.

RQ3

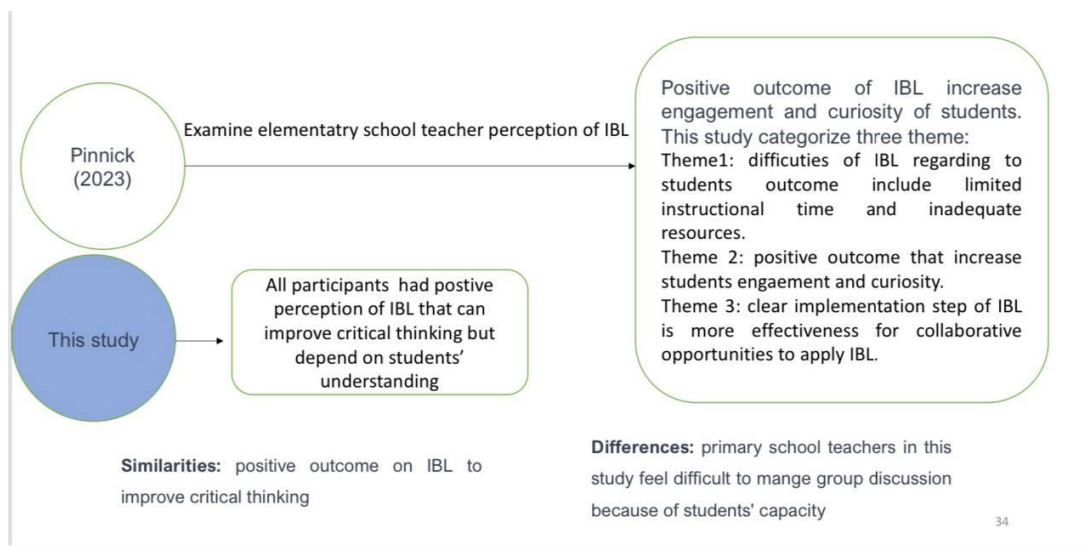


Figure 4. Teacher Perception and Outcomes of Inquiry-Based Learning (IBL)

This figure compares findings from Pinnick (2023) and "This Study" regarding teachers' perceptions of Inquiry-Based Learning (IBL) [28]. Pinnick (2023) highlights three themes: challenges with instructional time and resources, positive outcomes on student engagement, and the importance of clear implementation steps for collaboration. "This Study" similarly identifies positive perceptions of IBL for improving critical thinking but notes that its success depends on

students' understanding. The differences lie in managing group discussions, as teachers in "This Study" face challenges due to students' capacity.

RQ4

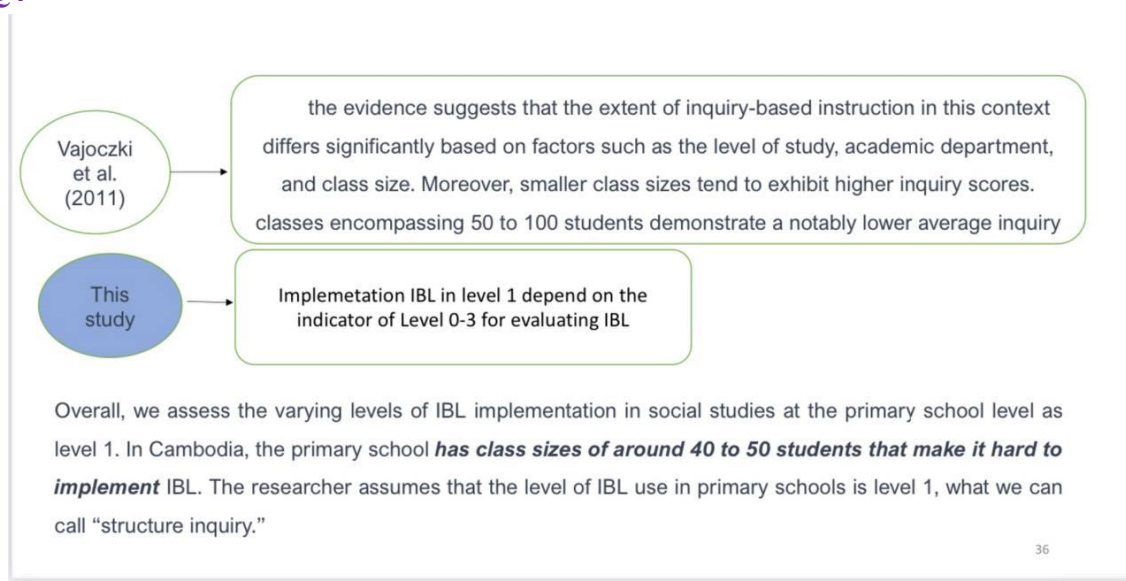


Figure 5. Influence of Class Size on Inquiry-Based Learning (IBL) Implementation

This figure compares the findings of Vajoczki et al. (2011) and "This Study" regarding the impact of class size on IBL implementation [29]. Vajoczki et al. (2011) suggest that smaller class sizes exhibit higher inquiry scores, while larger classes (50-100 students) show lower average scores. "This Study" highlights the challenges of implementing Level 1 IBL in Cambodian primary schools, where class sizes of 40-50 students make it difficult to apply structured inquiry effectively. The findings emphasize that class size significantly affects the success of IBL in educational settings.

CONCLUSION

We can conclude that teacher trainers have positive perception of IBL to promote critical thinking and students' engagement, understand well about IBL approach but they rarely use it in their teaching because of time allocate and trainees had low understanding and certain social studies subjects' content that might not be suitable for the IBL approach. They use IBL approach to train trainees to write lesson plan and practice teaching by using IBL approach to practicum. The level of implementation IBL approach in teacher training center is Level 2 "guided inquiry", key questions proposed by teacher trainers and trainees find answer and interpreted answer by themselves. 3. Initial primary school teachers try to implementation IBL approach in class as much as they can because of their class size have many students that it is difficult to use IBL approach. They reflection on their lesson plan on the time of writing that take around 1 to 3 hours to write it. They have positive perception on IBL that improve critical thinking in students' daily life. The level of implementation IBL approach in primary schools is Level 1 "structure inquiry", key questions proposed by teachers and facilitate on class activities. To enhance its effectiveness, future research should focus on scalable training programs, subject-specific adaptations, and practical guidelines for implementation in diverse

classroom settings. Additionally, integrating technology and providing continuous support for teachers can ensure the sustained success of the IBL approach, fostering more critical and engaged learners in the long term.

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CONFLICT OF INTEREST

"The authors declare no conflict of interest."

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